SECTION 10
National Energy Security and International Affairs

(Figure 1)

OVERVIEW/INTRODUCTION

U.S. national energy security depends on sufficient energy supplies at prices that support U.S. and global economic growth. Government energy policies that emphasize primary reliance on market forces have led to major energy security gains over the past two decades. Major exploration and production technology improvements as well as the trend toward opening new areas around the globe for exploration and development have yielded important dividends. Over the past twenty years, the U.S. and world economies have substantially diversified their sources of oil supplies, largely through increased production in the Western Hemisphere, the North Sea of Europe, and Africa. Greater diversity in the world's fuel mix has also been achieved, largely through greater reliance on natural gas. The rate of oil demand growth in the United States has been significantly mitigated since the first oil shocks of the 1970s through development of more energy-efficient industries, the growth of our service economy, and through greater efficiencies in vehicles, appliances and buildings. In the United States, energy intensity has declined by 30% since 1970 as the economy shifted toward greater use of more efficient technologies. Energy use per person is expected to remain stable through 2020. However, trends with regard to oil supply and demand point toward increased challenges for the global economy from both oil price volatility and increasing levels of oil import dependence. Market solutions to limit the growth in our oil imports would reduce the costs of oil consumption for our economy and increase our economic flexibility in responding to any domestic or international disruption of oil or other energy supplies. We cannot, however, look at U.S. energy security in isolation from the rest of the world. Given the size of the U.S. economy and its economic linkages around the world, significant disruption of globally traded energy supplies anywhere could adversely affect the domestic economy and the Government's ability to promote key foreign and economic policy objectives, whatever our own level of import dependence.

In this international chapter we will, therefore, focus on oil supply patterns and the global concentration of oil reserves. Our recommendations focus on the need to strengthen our alliances and deepen our dialogue with major oil producers, and to work for greater diversity in world oil production in, *inter alia*, the Western Hemisphere, Africa, and the Caspian. We will also address the growing demand for oil and other energy resources and, in particular, the need for greater cooperation with our allies in addressing oil demand growth in the transportation sector. We also see economic and environmental benefits from greater natural gas penetration and increased reliance on energy efficiency and clean coal technologies abroad. We need to assure that our partners in the International Energy Agency (IEA) continue to meet their obligations for emergency supply reserves. We will also work with the IEA, the Asia-Pacific Economic Cooperation forum (APEC), and bilaterally to encourage other large importers to consider similar measures.

Any examination of measures to enhance United States energy security must begin at home. The first step towards a sound international energy policy is to increase our own ability to produce, process, and transport the energy resources we consume in an efficient and environmentally

sustainable manner. The United States produces 72 of the 98 quadrillion BTUs of energy that it consumes. We are self-sufficient in virtually all our energy resources except oil, of which we import 52% of our net requirements, and natural gas, of which we import 15-16% net, primarily from Canada. (Figures 2 and 2a.)

In a global energy marketplace, however, U.S. national energy and economic security is directly linked to the provision of domestic and international energy supplies not only to our shores, but to those of our trading partners as well. Our energy security also depends on an efficient domestic and international infrastructure to support all segments of the energy supply chain. We can strengthen our own energy security and the shared prosperity of the world economy by working cooperatively with key countries and institutions to expand the sources and types of global energy supplies. We can also advance these goals by increasing efficiency in how energy is consumed, enhancing the transparency and efficient operation of energy markets, and improving our capacity to respond to disruptions. Energy is fundamental to economic growth, and we believe that economic growth and environmental protection can be mutually achieved.

OIL IMPORTS AND GLOBAL RESERVES

The U.S. influence on overall world markets is substantial in terms of both production and consumption. The U.S. is the world's second largest natural gas producer and its third largest oil producer. In a world oil market of 78 million barrels per day, the U.S. consumes fully 25%, slightly more than half of which is imported. Of the 11 million barrels per day in U.S. gross oil imports, we derive roughly half from the Western Hemisphere, 24% from the Middle East, 14% percent from Africa, and about 9% from Europe and Asia. (Figure 3.)

In 2000, we derived nearly 55% of our gross oil imports from four leading suppliers: 15% from Canada, 14% each from Saudi Arabia and Venezuela, and 12% percent from Mexico. (Figure 4.) U.S. security of supply is enhanced by several factors characterizing our diplomatic and economic relationships with these four top suppliers. These factors range from geographic proximity and Free Trade Agreements to integrated pipeline networks, reciprocal energy sector investments, shared security commitments, and, in all cases, long-term reliable supply relationships. Nevertheless, the price of our domestic or imported oil is determined by a world market, so our energy supply security interests transcend the source of our physical energy supplies.

Recommendation:

- Given the large and growing absolute and relative volumes of U.S. oil imports, our energy security, and our diplomatic leverage, will increase if we remove barriers to domestic investment to maintain America's leadership as a major world oil and natural gas producer.

The world's proven crude oil reserves remain relatively concentrated. (Figure 5) The Middle East holds 664 billion barrels, or roughly two-thirds of the world's conventional oil reserves, followed by the Western Hemisphere (14%) and Africa (7%). The most recent data from exploratory drilling in the Caspian region indicate that this region contains significant new reserves, many of which remain to be booked in the proven category.

The U.S. Department of Energy, through the Energy Information Administration's (EIA) *Annual Energy Outlook 2001,* forecasts that Gulf producers will supply between 54 and 67 percent of the world's oil trade by 2020. While this estimate may be high, and does not incorporate proposed energy policy changes by the United States and others, oil reserve realities suggest that the global economy will continue to depend to a significant and growing extent on the supply of oil from OPEC countries, particularly in the Middle East and Northern Africa. Vital United States interests therefore will require us to strengthen our alliances in this region. Saudi Arabia, the world's largest oil exporter, has been a linchpin of supply reliability to world oil markets. Saudi Arabia has pursued a policy of investment in spare oil production capacity, diversifying export routes to both its coasts, and providing effective assurances that it will use its capacity to mitigate the impact of oil supply disruptions in any region. Saudi Arabia, Kuwait, Algeria, Qatar, the UAE, Yemen, and other regional states with which we maintain relations are all seeking greater international investment in their energy sectors. This is a welcome development that can enhance shared commercial and strategic interests. By any estimation, therefore, Middle East oil producers will remain central to world oil security, and a central focus of our energy diplomacy.

Periodic efforts by OPEC producers to maintain oil prices above levels dictated by market forces have increased price volatility and prices paid by consumers, and worked against the shared interests of both producers and consumers in greater oil market stability. This remains a policy challenge, which we will meet over the longer term through a comprehensive energy policy that addresses both supply and demand, as well as through increased engagement with all our major suppliers. Greater diversity of world oil production remains important. Iraq's continued failure to comply with UN sanctions and its policy of regularly disrupting its own exports under the UN oil for food program, are just today's most compelling example of the risks of not diversifying the range of oil suppliers, for both the United States and for world oil markets.

(Figures 6 and 6a.) Major Gulf producers have called upon the United States to deepen our dialogue with them and others on important issues of transparency and accuracy of global oil market data. The United States can improve its diplomacy with vital oil producers by engaging in such discussions which can make the market work better. A lack of timely and accurate data relating to both oil production and inventory levels held throughout the supply chain in producing and consuming countries contributed to the volatility witnessed in 2000. Discussions among the major producers and consumer countries should be designed to improve the transparency, accuracy, and timeliness of the data that guide the market. In turn, enhanced data quality and increased data transparency will improve market efficiency.

It is longstanding U.S. policy to support a liberalized global energy sector that is open to international investment. The U.S. benefits from international investments at home that have increased our energy sector's capacity and its infrastructure. American energy firms remain world leaders, and their investments in energy producing countries enhance efficiencies and market linkages and environmental protections. Greater investment flows, in both directions, between oil importing and exporting nations can increase shared interests and enhance global energy security. A global energy infrastructure that efficiently and effectively meets growing global demand, and promotes greater investment flows will benefit both producers and consumers. Infrastructure enhancements will be a core element of our engagement with major foreign oil producers.

Recommendations:

- We will make energy security a priority of our foreign and trade policy. The Persian Gulf will be a primary focus of our international energy policy agenda but our engagement will be global, spotlighting existing and emerging regions that will have a major impact on the global energy balance.
- The U.S. will support initiatives by Saudi Arabia, Kuwait, Algeria, Qatar, the UAE and other suppliers to open up areas of their energy sectors to foreign investment so as to enhance mutual energy security and commercial interests.
- The U.S. will more actively support American energy firms abroad and use our engagement in multilateral organizations, such as the Asia-Pacific Economic Cooperation forum (APEC), the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO) Energy Services Negotiations, the Free Trade Area of the Americas, and our bilateral diplomacy to implement a system of clear, open, and transparent rules and procedures governing foreign investment and to level the playing field for U.S. companies overseas and reduce barriers to trade and investment.
- The U.S. will support efforts to craft a more effective dialogue among energy producing and consuming nations. We will refocus that dialogue beyond short-term price and production issues to long-term issues of fostering world economic growth, improving data quality, and addressing energy infrastructure needs in order to maintain a smooth flow of energy from the wellhead to the final consumer.
- **The U.S. (Department of Commerce) will develop a sectoral trade initiative to expand investment and trade in goods and services that will enhance exploration, production, and refining, and the development of new technologies.**

Sanctions

Sanctions can advance important national and global security objectives. Sanctions include U.S. unilateral sanctions as well as United Nations Security Council Resolutions, for example those covering Iraq. Sanctions can be an important foreign policy tool. Nevertheless, sanctions should be periodically reviewed for continued effectiveness, and to minimize externalities. From an energy supply perspective, unilateral sanctions -- including the Executive Orders on Iran and Libya and the Iran and Libya Sanctions Act (ILSA) -- affect some of the most important existing and "prospective" petroleum-producing countries in the world.

Recommendation:

- The U.S. will initiate a comprehensive sanctions review, and seek to engage the Congress in a partnership for sanctions reform. As a priority of U.S. domestic and foreign policy, energy security should be one of many factors to be carefully examined.

DIVERSITY OF SUPPLY

Concentration of world oil production in any one region of the world is a potential contributor to market instability, benefiting neither oil producers nor consumers. Therefore, encouraging

greater diversity of oil production, and, as appropriate, transportation, within and among geographic regions is a worthwhile goal -- and one with obvious benefits to all market participants. Technological advances will enable the U.S. to accelerate the prudent diversification of oil supplies, notably through deepwater offshore exploration and production in the Atlantic Basin, stretching from offshore Canada to the Caribbean, Brazil, and West Africa. The Caspian Sea will also be a rapidly growing new supplier. The ongoing development of so-called "heavy oil" reserves in the Western Hemisphere is an important factor that promises to significantly enhance global oil reserve and production diversity. Recent Canadian and Venezuelan success in making heavy oil deposits commercial suggests that they will contribute substantially to global energy supply diversity, and to our own energy supply mix over the medium to longer term.

Growing levels of conventional and heavy oil production and exports from the Western Hemisphere, the Caspian, and Africa are important factors that can lessen the impact of a supply disruption on the U.S. and world economies. Overall U.S. policies in each of these regions will focus on enhancing foreign energy policy engagement to improve the investment climate in these high priority regions in order to facilitate the flow of needed investment and technology.

We will invigorate bilateral commercial energy working groups designed to improve the investment climate in high priority countries. In addition to seeking new sources of oil, the USG works in partnership with developing countries to help them employ energy efficient technologies, mitigate the environmental impacts of energy use and improve access to energy resources. (Figure 7.)

Members of the World Trade Organization are beginning to examine global trade in energy services. The U.S. energy services proposal calls on WTO members to open their markets to the entire value-chain of energy services by assuring nondiscriminatory access to foreign energy services providers. Equally important, the U.S. proposal suggests that WTO members consider how best to create a pro-competitive regulatory environment for energy services, so that opaque or discriminatory regulatory practices do not undermine commitments to open their domestic markets to foreign service providers. Such objectives can also be pursued in the FTAA and APEC.

North America

Increased United States, Canadian, and Mexican energy production and energy cooperation enhance both world energy security and, through our trilateral economic links in the North America Free Trade Agreement (NAFTA) economy, fundamentally advance each country's economic security. As state and federal governments consider electricity restructuring, there will be a need to assure compatible regulatory frameworks with our neighbors.

(Figure 8.) Canada's deregulated, industry-led, energy sector has become the United States' largest overall external supplier of natural gas, oil and electricity. Canada's sustainable development-based energy strategies contribute to the health of the NAFTA economy and of our shared environment. Canada is our leading supplier of clean burning natural gas, supplying 14% of our consumption last year. An integrated network of pipelines, such as the Alliance Pipeline

linking Alberta to Chicago, demonstrates the integrated nature of North American energy trade. (Figure 9.) Natural gas deposits in Alaska and Northwest Canada exceed 70 trillion cubic feet (TCF). The private sector is poised to develop the continent's northern gas reserves, with pipeline linkages between both countries, to advance shared economic and environmental objectives. To the east, development of Atlantic Canada's offshore energy reserves is providing previously untapped sources of clean burning natural gas not only to Nova Scotia and New Brunswick but also to heating oil-dependent New England. (Margin: Figure 9a.) Our large cross-border electricity trade, much of it from hydropower produced in eastern Canada and from shared Canadian-American hydroelectric projects in the Pacific Northwest, provides important trade and clean air benefits while allowing both national electricity grids to benefit from load-sharing and integration.

Canada's oil trade, responding to market signals, increased 4% worldwide and 10% with the United States last year. Estimates of its recoverable heavy "oil sands" reserves are substantial and new technologies are being deployed to develop their potential. Production from these promising areas now approaches 600,000 barrels per day and continued development can be a pillar of sustained North American energy and economic security.

(Figure 10.) Our energy relationship with Mexico reflects the increasingly interrelated character of NAFTA economies and our contiguous border. U.S. natural gas reserves, pipelines and industries are closer to the growing border area than some of Mexico's reserves. The U.S. is a net supplier of refined petroleum products and of natural gas, primarily through pipeline connections to northern Mexico. Mexico is a leading and reliable source of our imported crude oil, and Mexico's large reserve base, approximately equal to our own proven oil reserves, makes Mexico a likely source of increased oil production over the next decade. The Mexican state of Baja California began exporting 50 megawatts of electricity to California in January, yet capacity constraints on both sides of the border inhibit additional trade there. Capacity and infrastructure at the border remain insufficient for greater flows of energy in either direction without significant future investment. In the United States, many of our statutes for "Presidential Permitting" of cross-border infrastructure linkages date to 1953 and need to be streamlined. Mexico will make its own sovereign decisions on the breadth, pace, and extent to which it will expand and reform its electricity and hydrocarbons capacities. Where it has opened its energy sector to private investment, such as in natural gas transmission, distribution, and storage, investments have been to our mutual benefit. To the extent Mexico seeks to attract additional foreign investment consistent with its Constitution, which reserves exploration and production rights to the Mexican government, the United States will actively encourage the U.S. private sector to consider market based investments.

Recommendations:

- Canada, Mexico, and the United States have begun consultations on closer energy integration, and the three countries have formed a Trilateral North American Energy Working Group to identify areas of cooperation, fully consistent with our respective sovereignties.
- The United States will make its own regulatory regime more compatible for cross-border trade. The Departments of State and Energy, in consultation with the Federal Energy Regulatory Commission, have initiated a review of their respective oil, natural gas, and

electricity cross-boundary "Presidential Permitting" authorities and will propose new Executive Orders for the President's approval within six months.

- The United States will initiate an inter-agency review of Treaty, Legislative, environmental, and statutory issues and requirements in April to assure that the Federal Government is prepared to adequately and promptly review any application for a Northern Gas pipeline(s) route.

Latin America and the Caribbean

(Figure 11.) Latin America and the Caribbean are growing not only as major producing regions, but also as major consumers of oil and natural gas. Unprecedented development of South America's vast (226 trillion cubic feet) natural gas reserves, illustrated by trans-continental pipelines linking Bolivia, Brazil, Argentina, Chile, Paraguay, and Uruguay, increase regional self-reliance, affirm economic integration, aid the environment, and stem oil demand growth. Trinidad and Tobago's progressive investment code has made it the hemisphere's largest exporter of Liquefied Natural Gas (LNG), including the largest supplier of LNG to the United States.

The thirty-four democratically elected leaders of our hemisphere will meet April 20-22 in Quebec City for the Third Summit of the Americas. Our hemisphere's leaders will call for a renewed effort to deepen regional energy cooperation and spur the energy integration of our region. The United States, with Venezuela, is a co-coordinator of this process, and Secretary of Energy Spencer Abraham's first foreign trip was to attend a Hemispheric Energy Ministerial in Mexico City, bringing energy ministers together to work towards common cooperative ends. (Figure 12.)

A major energy producer, OPEC founder Venezuela's energy industry is increasingly integrated with the U.S. marketplace. Venezuela's downstream investments in the U.S. make it a leading refiner and gasoline marketer here. Growing U.S. and international investments in Venezuela's energy sector, particularly in its resource rich heavy oil sector, are enhancing Venezuela's ability to meet its development goals and to keep pace with a growing world energy marketplace. Similarly, Brazil's world-class oil industry is partnering with U.S. and other investors to develop Brazil's prolific offshore oil reserves.

- The U.S. will seek to resume negotiations with Venezuela on a Bilateral Investment Treaty, and the U.S. will propose formal energy consultations with Brazil, to improve the energy investment climate for the growing level of energy investment flows between the U.S. and each of these countries.

- The U.S. will demonstrate leadership, working through the Summit of the America's Hemispheric Energy Initiative to quicken the pace of hemispheric energy integration, and to intensify energy cooperation in the Western Hemisphere.

Africa

(Figure 13.) Sub-Saharan Africa is responsible for 7% of world oil reserves and 11% of world production. Along with Latin America, West Africa is expected to be one of fastest growing sources of oil and gas for the American market. African crude tends to be of high quality and low sulfur content, making it suitable for stringent refined product requirements, and giving it a growing market share for refining centers on the East Coast of the United States. OPEC member Nigeria exports an average of 900,000 bpd out of 2.1 million bpd total productions. Nigeria, in partnership with the private sector, has set ambitious production goals as high as 5 million bpd over the coming decade. Angola's growing offshore oil industry, with participation by U.S. and international oil firms, is also a major source of growth. In 2000, it exported 300,000 bpd out of its 750,000 bpd of total production to the U.S., with a potential for exports to double over the next ten years. Other significant exporters to the U.S. included Gabon, at 142,000 bpd, and the Congo-Brazzaville at 52,000 bpd. The World Bank has supported Chad's efforts to begin ambitious oil development, and its participation in an export pipeline provides important environmental and other technical expertise and oversight. This year an international consortium that includes U.S. firms began investing $3.5 billion in a pipeline from Chad to Cameroon, the largest infrastructure project in Africa today. When complete, the pipeline will allow Chad to export up to 250,000 bpd. USAID has provided technical assistance in support of a West Africa Power Pool and associated pipeline project involving a number of U.S. oil companies, and is providing assistance for the creation of a regional regulatory framework that will enable Ghana and Nigeria to become major exporters of natural gas and electricity. The West Africa Gas Pipeline is a 1,000-kilometer, $400 million onshore/offshore natural gas pipeline connecting Nigeria with Benin, Togo, and Ghana. The pipeline is being built by a consortium of companies, and includes financing by the U.S. Export-Import Bank.

Recommendations:

- The U.S. will reinvigorate the U.S.-Africa Forum, the U.S.-African Energy Ministerial process (the next session will be in February 2002 in Marrakech), and deepen bilateral and multilateral engagement to promote a more receptive environment for U.S. oil/gas investment and operations and promote geographic diversification of energy supplies, addressing such issues as transparency, sanctity of contracts, and security.
- The U.S. will seek to recast our Joint Economic Partnership Committee (JEPC) with Nigeria to improve the climate for U.S. oil/gas investment and operations and to advance our shared energy interests.

Caspian

(Figure 14) Proven oil reserves in Azerbaijan and Kazakhstan are about 20 billion barrels, a little more than the North Sea and slightly less than the U.S. Exploration, however, is continuing, and proven reserves are expected to increase significantly. For example, initial results of the exploration well at Kazakhstan's Kashagan field that were announced last year indicate the find is probably one of the most important in 30 years (comparable to Prudhoe Bay in size) and perhaps one of the five largest oil fields of all time. This discovery will significantly increase Caspian reserves. Current exports from the region are only about 800 thousand bpd, in part due to limited export route options. However, potential exports could increase by 1.8

million bpd by 2005. Moreover, there is considerable optimism that exports could grow even more substantially in subsequent years.

Foreign investors and technology are critical to rapid development. Development of commercially viable export routes will ensure that rising Caspian oil production is effectively integrated into world oil trade. U.S.-supported East-West pipeline routes (see Map 10-1) will add substantial new oil transportation capacity to allow continued expansion of production and exports. Overland routes, such as the planned Baku-Tbilisi-Ceyhan oil pipeline, will also help mitigate maritime risks in the crowded Bosporus Straits. To help countries prepare for increased oil production within the region, the U.S. is working with Black Sea and Caspian Sea border states to ensure that they develop adequate oil spill response capabilities. (Figure 15.)

The U.S. also supports completion of a natural gas pipeline from Azerbaijan's Shah Deniz field to Georgia and Turkey. As the Caspian region boasts significant natural gas reserves, we hope to see additional gas pipelines in the future exporting Caspian gas to Turkey and onward to the rest of Europe. These additional projects could also involve Turkmenistan, Armenia, Kazakhstan, and perhaps Uzbekistan.

Recommendations:

- The U.S. supports the Baku-Tbilisi-Ceyhan (BTC) oil pipeline as it demonstrates its commercial viability.
- We will continue working with relevant companies and countries to establish the commercial conditions that will allow oil companies operating in Kazakhstan option of exporting their oil via BTC.
- The U.S. supports the efforts of private investors and regional governments to develop the Shah Deniz gas pipeline as a way to help Turkey and Georgia diversify their natural gas supplies and help Azerbaijan export its gas via a pipeline that will continue diversification of secure energy supply routes.
- We will encourage Greece and Turkey to link their gas pipeline systems to allow European consumers to diversify their gas supplies by purchasing Caspian gas.
- Complete the current cycle of oil spill response readiness workshops; consider further appropriate steps to ensure implementation of results.
- The U.S. will deepen its commercial dialogue with Kazakhstan, Azerbaijan, and other Caspian states to provide a strong and stable business climate for energy and related infrastructure projects.

Russia

Russia has 5% of the world's proven oil reserves, and in 2000, Russia produced an average of 6.7 million barrels per day of total oil, making it both the world's second largest producer and, at 4.2 million bpd, its second largest exporter. Crude oil production in 2000 represented an increase of 7% over 1999, the first increase since the dissolution of the Soviet Union, and a similar rate of increase is projected for 2001. New fields are being developed, including with U.S. and other foreign investors. Nevertheless, substantial infrastructure investment is still needed, as well as legislation and normative acts to finalize the Production Sharing Agreement (PSA) mechanism for private sector participation and actions to improve the general investment climate. Russian

oil firms are increasingly active on a global scale, with upstream and downstream investments in the Caspian, the United States, Africa, South Asia, and Europe, enhancing Russia's ability to develop its own, and international, oil reserves.

Russia also holds 33% of the world's natural gas reserves, exporting a full 35% of its production to Europe and Central Asia in 1999. Russian natural gas exports can increase regional fuel diversification and advance environmental goals. With production declines now evident in existing fields, development of new reserves, requiring substantial new investments, will be necessary.

Recommendations:

- The U.S. will deepen the focus of our bilateral dialogue with Russia on energy and the investment climate.
- The U.S. will assist its companies in their dialogue on the business climate with Russian officials, to encourage reform of the Production Sharing Agreement law and regulations and related tax provisions, as well as general improvements in the overall investment climate. This will help expand private investment opportunities in Russia and an increased role for Russian firms internationally.

DIVERSIFICATION OF FUEL MIX

The growing demand for more fuel-efficient technologies offers U.S. industry significant trade and investment opportunities overseas, while addressing growing world oil demand. The U.S. supports a practical, market-based approach that encourages the adoption of more efficient fossil fuel technologies, including natural gas and renewable energy technologies. This approach will take into account existing national and international programs and energize both public and private action. Introduction of these technologies abroad also supports U.S. national interests by reducing competition for the scarce fossil fuel resources on which the global economy continues to rely. Overall, the U.S. Government's goal is to support the creation of the policy and regulatory tools, and innovative finance and market mechanisms, that will provide local businesses and consumers greater incentives to make more cost-effective energy efficient investments and consumption decisions. Increased use of renewables would improve U.S. energy security, yield global environmental benefits, improve social and economic stability in the developing world, and provide significant trade and investment opportunities to U.S. industry. Promotion of clean energy technology exports can mitigate international dependence on oil supplies from volatile regions, help lower energy costs for U.S. consumers, bring U.S. firms greater access to large foreign markets, and enhance U.S integration with global sources of innovation. The U.S. Government is participating in efforts of the International Energy Agency, the G-8, the Organization for Economic Cooperation and Development (OECD), the United Nations, multilateral development banks, -- and in consultations with U.S. industry -- to formulate effective strategies for accelerated market penetration of renewable energy technologies. Significant market penetration will depend on further reducing the cost of deploying these technologies. The Clean Energy Technology Exports Working Group (CETEWG), a federal inter-agency task force, is beginning the process of creating a strategic plan that is responsive to Congressional directions and that provides an informed roadmap of benchmarks for the future deployment of clean energy technology exports by U.S. companies.

Through its Clean Energy Trade Initiative, the Department of Commerce will showcase market-ready U.S. technologies that generate a cleaner environment and that increase energy efficiency

Recommendation:

- Promote market-based solutions to environmental concerns; support exports of U.S. "clean" technologies and encourage development of such technologies abroad; engage bilaterally and multilaterally to promote best practices; explore collaborative international basic Research and Development in energy alternatives and efficiency technologies; explore innovative programs to support adoption of these technologies by all countries.

Climate Change

The Administration takes global climate change very seriously. We are committed to addressing this issue in a manner that protects our environment and our economy. For this reason, the Administration is undertaking a cabinet-level review of climate change policy. Rather than get locked into a multi-billion dollar effort that could result in minimal impact on the problem, we chose to step back to re-consider if there are more effective ways to address global climate change. This review will consider what policies we should pursue both domestically and internationally.

We want to work with our friends and allies to develop a creative new approach to climate change. The United States has invited others to examine global climate change issues anew -- including the science, technologies, market-based systems, and innovative options for addressing concentrations of greenhouse gases in the atmosphere.

As with any challenge with such enormous economic consequences, we must act on the very best science. A review of the most recent science findings will be an integral part of our policy review toward the international climate change negotiations. Understanding the science is essential to getting the right approach.

The Administration supports:

- Continued research into the causes and impacts of global warming;
- Continued efforts to look at cost- and environmentally-effective ways to use market mechanisms and incentives to address climate change;
- Development of new technologies to reduce greenhouse gas emissions; and
- Preparation of a comprehensive, fair, and effective international agreement to address climate change in a manner that harnesses the power of the marketplace to reduce greenhouse gas emissions.

OIL CONSUMPTION

U.S. energy security will be influenced not only by our own efforts to enhance supply and enhance our own already high levels of energy efficiency per unit of GDP, but also by strong oil demand growth internationally. Rapid growth in oil consumption by non-OECD countries will increase worldwide competition for global oil supplies and put increased pressure on our shared

environment. According to EIA estimates, worldwide oil consumption will grow 2.1% per year over the next two decades. But oil demand is projected to grow three times as fast in non-OECD countries as in OECD countries. Accordingly, non-OECD countries' share of oil demand will rise from 41 to 52%. China and India will be major drivers of this growth. Moreover, both will rely heavily on imports to meet their needs. (Figure 16.) This will increase the stake that many developing countries have in assuring access to significant energy resources, as well as their incentive to pursue energy efficiency.

As is the case in the United States, a major component of demand growth is the transportation sector. Transportation has been responsible for nearly all the growth in OECD oil consumption over the last 20 years, and is projected to be the leading source of future oil consumption growth through 2020. According to EIA, transportation-related fuel consumption in the developing world is expected to more than double by 2020, growing at an annual average rate of 4%. Therefore, both OECD and developing countries will need to increase their focus on efficiencies in the transportation sector. The momentum to create market mechanisms supporting alternative fueled vehicles will increase. Best practices that seek to reduce the cost of these technologies and to promote market penetration should be pursued. Without additional efforts to reduce this consumption growth, fuel needs of the transportation sector will force an increasing dependence on oil in both the developed and developing world.

Recommendations:

- The United States Government should intensify international cooperation on finding alternatives to oil in all sectors, coordinating with other governments and international organizations.
- **[Add G-8 language?]**
- The United States will reinvigorate its dialogue with the European Union on energy issues, and will resume the consultative process in Washington on April 30.

EMERGENCY PREPAREDNESS FOR OIL SUPPLY DISRUPTION

U.S. and world exposure to oil supply disruptions is increasing as the size of strategic and commercial stocks (relative to demand) declines -- a result of rising global demand, tight supplies, and inadequate efforts to establish or expand oil stockpiles. Such a situation magnifies the importance of U.S. coordination with other members of the International Energy Agency (IEA), comprised of most OECD member governments. Each IEA member that is a net oil importer is required to hold stocks equal to 90 days or more of its net imports. The IEA maintains agreed mechanisms for coordinating the use of these stocks in responding to a physical supply disruption. Collectively, the net oil-importing members of the IEA currently hold approximately 113 days worth of strategic and commercial stocks. (U.S. stocks, which include both government and commercial stocks, are slightly above the IEA average.) This is more than required, but far below the peak coverage of 157 days reached in 1986. Moreover, several member states have fallen below the 90-day threshold. (Figure 17.)

The U.S. meets part of its IEA obligation through government-owned stocks, held in the U.S. Strategic Petroleum Reserve (SPR). The SPR currently holds 541 million barrels of oil, enough

to cover the unlikely loss of all U.S. imports for 54 days or a partial disruption for much longer. This oil could be withdrawn at a maximum rate of over 4 million bpd initially and could reach the market within 15 days of a presidential directive. Because of increased net oil imports, the days of oil import coverage provided by the SPR has declined considerably over the past decade. In 1990, the SPR contained enough oil to compensate for the loss of 82 days worth of U.S. imports -- substantially more than today's 54-day supply.

Recommendations:

- The United States should reaffirm that the Strategic Petroleum Reserve is designed to address an imminent or actual disruption in oil supplies, and not for managing prices.
- Within the IEA, the U.S. will work to ensure that member states fulfill their stockholding.
- We will encourage, in concert with our allies, other major-consuming countries that are not IEA members to consider strategic stocks as an option for addressing potential supply disruptions. In this regard, we will work closely with Asian economies, especially through APEC.
- Consistent with statutory authorities, the U.S. could offer to lease excess SPR storage facilities to countries (both IEA and non-IEA members) that might not otherwise build storage facilities or hold sufficient strategic stocks.
- A recommendation will be made to the President, at such time that exchanged SPR barrels are returned to the SPR, to determine whether offshore Gulf of Mexico royalty oil deposits to the SPR should be resumed, thereby increasing the size of our reserve.
- We will work with producer and consumer country allies and the IEA to craft a more comprehensive and timely world oil data reporting system.